



Social Media and Risky Sexual Practices among Undergraduate Students in a Private University in Southern Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Social networking has become integral to the intellectual, emotional and social lives of the young. The often-unrestricted access to sexually explicit content on the social media and associated adverse sexual health among this group, constitute key outcomes in public health research.

Aim: To determine social media use and the effect on sexual practices among undergraduate students in a private university in Southern Nigeria.

Methodology: This descriptive cross-sectional survey among 300 undergraduate students of Madonna University Nigeria, Elele campus, was conducted between June and November, 2019. Respondents were selected using multistage sampling technique. Data were obtained using self-administered semi-structured questionnaires. Data analysis employed statistical package for social

sciences version 22.0. Chi-square test was used to determine statistically significant associations between variables at p values ≤ 0.05 .

Results: Out of a sample size of 300, all were returned and analysed, giving a response rate of 100%, and a mean age of 21.85 ± 2.63 years. The awareness of social media was 97.9%, with commonest 237 (79%) from friends/peers. The reasons cited for its use include: 208 (72.7%) access to news, 182 (63.6%) academics, while 173 (60.5%) accessed social media for sexually explicit content. The mean age at sexual debut was 17.44 ± 2.63 years. There were associations between use of social media for sexually explicit content and [the sexually active ($p=0.000$); type of sexual acts practised ($p=0.003$) and number of sexual partnerships ($p=0.000$)] respectively.

Conclusion: This study found an association between use of social media for sexually explicit content and risky sexual practices. No association was found between ever had sexual act and gender. We recommend behaviour-change interventions that control social media use for sexually explicit content and not compromise access to sexual health education among them.

Keywords: Undergraduates; Elele Nigeria; social media; risky sexual practices.

1. INTRODUCTION

Several theories of media effects have documented the central place of content on influence of the media. One key source of risks from the way humans experience and express their sexuality, is exposure to social media with sexually explicit content [1]. Emerging evidence also suggests that social media affects sexual practices among young people [2,3,4,5].

“Social media (or social networking) are interactive computer-mediated technologies that facilitate the creation and sharing of information, ideas, careers, interest and other forms of expression via virtual communities and networks” [6]. Since the advent of social networking sites, classmate.com, in 1995 and six degrees; in 1997, a plethora of social interaction outlets has flooded the internet space [6,7,8]. Notable among these include Facebook, Whats App, Twitter, Instagram, etc. [9], and recently, tiktok.

A new paradigm transition in the delivery of digital interventions was the launch of internet access via smartphones and the development of apps for these phones [10]. Researchers have reported increasingly easy access to sexually explicit content on the social media, coupled with dwindling sexuality education at homes and schools [11]. They noted that social media can serve as useful tool in behaviour-change initiative received by digital routes [10]. For instance, digital media interventions which are interactive and tailored (meaning that users receive need-based feedback in response to the input of person-specific relevant data), as active engagement with intervention and receipt of information that is of user-specific relevance is

more likely to enhance consolidation of learning and behaviour change [10,12].

In this era of social media, referred to as web 2.0 [13], acts such as meeting partners online, pornography online, ‘sexting’ (the sharing of sexually explicit digital messages and or images) are unlikely to help users conceive positive sexual health ideas [10]. It is not unusual for social media users to be exposed to the risks of early age at sexual debut, excessive masturbation, unprotected sexual act and multiple sexual partnerships [11,14]. This trend had brought concerns among school authorities, parents, communication experts and other relevant stakeholders on the benefits and potential risks facing undergraduates, as they engaged in online social networking to meet their social and educational needs [15,16].

Not much is known of the relationship between social media use and sexual practices among undergraduates in Nigeria [2,11]. There is proliferation of privately managed universities in the Country (and globally), some of which are faith-based. Restrictions to social media use in such environments could be related to the orientation of respondents to sexual options- sex movies and pornography and access to sexual health educational content. Information about sexual practices is essential to the design and assessment of digital interventions to improve sexual health in this evolving environment [17,18]. The findings of this study will help educate the populace on healthful use of social media and as such bridge the knowledge gap on the effect of social media use on risky sexual practices. It will provide information for policy makers, governmental and non-governmental organisations working on young undergraduates’

sexuality issues. It is against this backdrop that the researchers designed this study to determine social media use and the effect on risky sexual practices among undergraduate students in a private faith-based tertiary educational institution in Nigeria

2. RESEARCH METHODOLOGY

2.1 Study Design

This was a cross sectional descriptive study.

2.2 Description of Study Area

This study was conducted from June to November 2019, in Elele, a town in Ikwere Local Government Area of Rivers state, Nigeria. The study setting was Madonna University (established in May 1999). It is the premier private and first faith-based university in Nigeria, owned by the Roman Catholic Church. It runs a multi-campus system on full residential basis for all undergraduate regular students. Madonna University Nigeria, Elele campus, the study setting comprised five faculties (including the faculty of Medicine), with each made up of two to five departments. It has a state of the arts Information and Communication Technology unit. The undergraduate student population was about 3000.

Data were obtained using pre-tested, self-administered, semi structured questionnaires

2.3 Study Participants

The study population comprises all the students of Madonna University Elele campus, who are undertaking an undergraduate regular program.

2.3.1 Inclusion criteria

Students enrolled in an undergraduate regular program at Madonna University Elele campus for at least one year, who gave consent.

2.3.2 Exclusion criterion

Students enrolled in an undergraduate regular program at Madonna University Elele campus for at least one year, who were absent during the study period.

2.4 Variables

These comprise: a) Sociodemographic variables such as respondents' age, gender, religion, etc.,

b) Awareness, reason for social media use and c) Sexual practices.

2.5 Data Sources/Measurement

Frequencies of the variables was determined by univariate analysis, while bivariate analysis, using chi-square test was employed in testing associations between several variables.

2.6 Bias

This study is based on self-reporting practices and due to the sensitive nature of the questions, the data are subject to reporting errors such as underreporting of characteristics like access to sexually explicit content online, multiple sexual partnerships, oral and anal sexual practices. Secondly, sexual practices such as early age at sexual debut, could lead to recall bias.

2.7 Study Size

2.7.1 Sample size determination

The sample size was determined using the sample size formula for cross sectional studies in populations greater than 10,000 (Cochran) stated thus [19]: $n = Z^2 pq/d^2$, where n = minimum sample size; Z = standard normal deviate at 95% confidence interval set at 1.96; p = prevalence in a previous study; $q = 1 - p$; d = degree of precision (0.05); Thus using a prevalence from previous study done at Osogbo metropolis, Nigeria, which showed 73.5% as the prevalence rate [2]. Hence $p = 0.74$. The target study population, N is 3000 which is less than 10,000. So the Modifying formula [20]: $n_f = n/1 + (n/N)$, where n_f = minimum sample size (population less than 10,000) n = calculated sample size (population greater than 10,000), N = target study population, less than 10,000. $n_f = 269.0$. Assuming 10% of the sample size was added to cover for attrition = 296. Therefore, the estimated sample size was approximately 300 students.

2.7.2 Sampling technique

The study population involves multiple (primary, secondary and tertiary) sampling units. Therefore, multistage sampling technique was used to enrol participants into this study. STAGE 1: Stratified sampling technique was used to group the students into five faculties. STAGE 2: Simple random sampling technique was used to select two departments from each faculty. STAGE 3: With the departmental register`

serving as sampling frame, simple random sampling technique using a table of random numbers, was applied to select thirty participants per department (i.e. sixty per faculty and 300 in the five faculties). Spots for collection per faculty were designated at convenience of participants.

2.8 Data Collection Tools

Data were obtained by self-administered pre-tested, semi-structured questionnaires developed from review of relevant literatures. The questions were written in English language and then pre-tested on similar set of respondents in Madonna University, Nigeria Okija campus. Checks for reliability, validity, appropriateness of format, wording and time needed to fill the questionnaire, were done. Then the tools were reviewed, adjusted and corrected accordingly, prior to the administration of questionnaires to the study participants. Training of data collection team and field monitoring of data collection were also done. Daily experiences were shared and field problems were solved.

2.9 Quantitative Variables

Continuous variables were displayed as means ± standard deviation (SD).

2.10 Statistical Methods

The data were edited, entered into the computer and cleaned by range and consistency checks. Data was analysed using International Business Machine/ statistical package for social sciences (IBM/ SPSS) Windows version 22.0 [21]. Descriptive data were presented in form of simple frequencies and percentages. Chi-square test was used to determine statistically significant associations between variables at p values < 0.05.

3. RESULTS

Table 1 shows the socio-demographic characteristics of respondents. Three hundred questionnaires were distributed, returned and were thus analysed giving a response rate of 100%. The mean age of respondents was 21.85+ 2.63 years. The modal age group 149 (40.7%) was 21-26 years, 194(64.7%) were females, 281 (93.7%) were never married, while 292 (97.3%) were Christians.

Table 2 shows the awareness, reason for use of social media among respondents. The respondents reported that 299 (97.9%) had awareness of social media. On the source of

Table 1. Socio-demographic characteristics of respondents

Characteristics	Frequency N=300	Percentage (%)
Age at last birthday (in years)		
16-20	110	36.7
21-25	149	49.7
26-30	41	13.6
Mean age = 21.85+ 2.63 years		
Gender		
Male	106	35.3
Female	194	64.7
Marital status		
Never married	281	93.7
Currently married	17	5.7
Divorced/separated	1	0.3
No response	1	0.3
Religion		
Christianity	292	97.3
Islam	7	2.4
African Traditional religion	1	0.3
Ethnicity		
Ibo	206	68.9
Yoruba.	35	11.7
Hausa.	8	2.7
Others*	80	16.7

* Others- Edo, Ikwerre, Ijaw, Esan, Urhobo, Igala, Efik, Tiv, Isoko, Ogoni

Table 2. Awareness, reason for use of social media among respondents

Variables	Frequency (N-300)	Percentage (%)
Have heard of Social media		
Yes	299	99.7
No	1	0.3
Total	300	100
Sources of information on Social media*		
Friends/Peers	237	79
School	155	51.7
Television	121	40.3
Siblings	102	34
Radio	82	27.3
Print media	62	20.7
Parents	55	16.3
Ever used Social media		
Yes	286	95.3
No	14	4.7
Total	300	100
Reasons for use of Social media*(n=286)		
Access news	208	72.7
Academics	182	63.6
Sex movies and pornography	173	60.5
Access sexual health educational content	111	38.8
Emails	111	38.8
Games	105	36.7
Sports	31	10.8
Accesses Social media for sexually explicit content		
Yes	173	57.3
No (for other reasons)	113	37.7
No (Do not use Social media)	14	4.7
Total	300	100
Commonest reason for not accessing Social media for sexually explicit content (n=127)		
Not interested	62	54.9
It is inappropriate	30	10.5
It is against my faith	15	13.3
Do not use Social media	14	4.7
Restrictions on campus	3	2.7
It is addictive	2	1.8
Do not own a smartphone	1	0.8
Total	300	100

* Multiple responses

information on social media, 237 (79%) were from friends/peers, 155 (51.7%) from schools, 121(40.3%) from television. Two hundred and eighty six (95.3%) respondents ever used social media for reasons such as 208 (72.7%) access to news, 182(63.6%) academics, while 173 (60.5%) respondents accessed social media for sex movies cum pornography and sexually explicit content respectively. The commonest reason for non-use of social media for sexually explicit content was 63 (54.3%) lack of interest.

Table 3 highlights the sexual practices among respondents. The modal age group and mean age at sexual debut were 16-20 years and 17.44 +2.63 years respectively. The form of sexual acts respondents are aware of, include: 209 (69.7%) Oral sex, 190 (63.3%) Vaginal/penile, 185 (61.7%) Masturbation. While 126(82.4%) of the ever had sex were sexually active, the form of sexual acts respondents practice include: 119(77.7%) Vaginal/penile, 85 (55.6%) Oral sex, 58 (55.6%) Sexting. Of the 153 that ever had

sex, 100 (65.4%) engaged in penetrative sex; 113 (77.7%) reported having steady partnerships (Boy/girlfriend). Sixty (39.7%) had partners met up on social media, while 32 (20.9%) patronized commercial sex workers. Though 124 (811%) used condoms, 59 (47.6%) were consistent.

Table 4 shows the ever had sex among respondents. Fifty eight (19.3%) males have ever had sex, compared to 95 (31.7%) females. There was no statistically significant association between gender and ever had sex ($\chi^2=0.90329$, $p=0.301$).

Table 3. Sexual practices prevalent among respondents

Sexual practices	Frequency (N-300)	Percentage (%)
Ever had sex		
Male	106	33.3
Female	194	64.7
Age at sexual debut, (n=153)		
<5	2	1.3
6-10	5	3.3
11-15	27	17.8
16-20	38	64.1
21-25	17	11.1
26-30	4	2.6
Mean age at sexual initiation	17.44+2.63years	
Form of sexual acts respondents are aware of*		
Oral sex	208	69.7
Vaginal/penile	190	63.3
Masturbation	185	61.7
Anal sex	160	53.3
Sexting	99	33
Sexually active (had sex in< 3 months), (n=153)		
Yes	126	82.4
No.	27	17.6
Form of sexual acts respondents practice (n=153)*		
Vaginal/penile	119	77.7
Oral sex	85	55.6
Sexting	56	37.9
Masturbation	47	30.7
Anal sex	36	23.5
Type of sexual acts practice (n=153)		
Penetrative	100	38
Non penetrative	16	9.8
Not specific	38	24.8
Type of sexual partnerships, (n=153)*		
Steady partner (Boy /girlfriend)	133	77.7
Casual contact	68	44.4
Partner met on social media	68	39.2
Commercial sex worker	60	20.9
Number of sexual partnerships, (n=153)		
Single	97	63.4
Multiple	56	36.6
Ever used condoms, (n=153)		
Yes	124	81.1
No	29	13.9
Frequency of condom use, (n= 124)		
Consistently	59	47.6
Occasionally	64	51.6
No response	1	0.81

* Multiple responses

Table 4. The relationship between gender and the ever had sexual act among respondents

Gender	Ever had sexual act			Test statistic	p value
	Yes (%)	No (%)	Total (%)		
Male	58(19.3)	48(16)	106 (35.3)	0.9032	0.301
Female	95(31.7)	99 (33)	194 (64.7)		
Total	153(51)	147 (49)	300 (100)		

Table 5. Relationship between social media use and sexual practices among respondents

Sexual practices	Accesses Social media for sexually explicit content (n=300)			Test statistic (χ ²)	p value
	Yes (%)	No (%)	Total (%)		
Ever had sex					
Yes	90 (30)	63 (21)	153(51)	χ ² =0.171	0.6795
No	83 (27.7)	64 (21.3)	147 (49)		
Total	173(57.7)	127(42.3)	300(100)		
Sexually active, n=153					
Yes	84 (54.9)	42 (27.5)	126 (82.4)	χ ² = 15.27	0.000*
No	7 (4.6)	20 (13)	27 (17.6)		
Total	91 (59.5)	62(40.5)	153 (100)		
Type of sexual acts, (n=153)					
Penetrative	68 (44.4)	32 (21)	100 (65.4)	χ ² =8.644	0.003*
Non penetrative	7 (4.6)	8 (5.2)	15 (9.8)		
Not specific	16 (10.5)	22(14.3)	38 (24.8)		
Total	91 (59.5)	62(40.5)	153 (100)		
Number of sexual partners, (n=153)					
Single	73 (47.7)	24 (15.7)	97 (63.4)	χ ² =27.203	0.000 *
Multiple	18 (11.8)	38 24.8)	56 (36.6)		
Total	91 (59.5)	62(40.5)	153 (100)		
Number of sexual partners, (n=153)					
Single	73 (47.7)	24 (15.7)	97 (63.4)	χ ² =27.203	0.000 *
Multiple	18 (11.8)	38 24.8)	56 (36.6)		
Total	91 (59.5)	62(40.5)	153 (100)		
Use of condoms,(n=153)					
Yes	78 (51)	46 (30.1)	124 (81.1)	χ ² =2.0025,	0.157
No	13 (8.5)	16 (10.4)	29 (18.9)		
Total	91 (59.5)	62(40.5)	153 (100)		

* Statistically significant association = $p \leq 0.05$, χ^2 - Chi square test

Table 5 shows the relationship between use of social media for sexually explicit content and risky sexual practices of respondents. There were statistically significant associations between use of social media for sexually explicit content and [the sexually active ($\chi^2= 15.27$, $p=0.000$); type of sexual acts practised ($\chi^2=8.644$, $p=0.003$) and number of sexual partners ($\chi^2=27.203$, $p=0.000$)] respectively.

4. DISCUSSION

This cross-sectional descriptive study determines social media use and the effect on sexual

practices among undergraduate students in a private university in Nigeria. In this survey, 299 out of the 300 respondents reports awareness of social media. Other studies report 100% awareness among respondents studied [22,23]. On the source of information about social media, more than seven in every ten of them heard about social media from friends/peers, then from schools. This is in tandem with the findings of another study where a significant proportion of respondents reports 'friends 'as the commonest source of awareness about social media [24]. Even a survey among preparatory school youths in Southern Ethiopia, where school youths were

exposed to sexually explicit materials within their immediate environment (the school) notes it was mainly through friends [25].

From the findings of this study, about 95.3% of respondents who claimed they ever used social media. The primary reasons for their use of social media was to have access to news and academic materials, to watch sex movies and pornography. This is also in keeping with the findings of other studies [23,24]. The index study finds that a majority of respondents accessed social media for sexually explicit contents and that this could have effects on their sexual activity. Similar reports are made elsewhere [26]. On the commonest reason for non-use of social media for sexually explicit contents, the current study cites lack of interest. The Media Practice Model corroborates this finding [26]. Though quite few respondents in our study reports avoidance of addiction to social media as reason for non-use of social media for sexually explicit contents, Oluwatoyin et al. [14], concurs with a growing number of Nigerian authors that addiction to social media sites are potentially a disruptive technology to students' academic work in higher institutions [27]. More so, the students are mostly on campus, apparently free from influence of parents/ family, modernization and undue exposure to effectively promoting positive sexual practices and increasingly uncontrolled access to options such as social media [28,29,30].

Our study finds that the mean age at sexual debut is 17.44±2.63 years. This finding agrees with the findings of other studies that the age of sexual debut is getting younger over time [31-35]. The current study reports that the form of sexual acts respondents are aware of, include, Oral sex, Vaginal/penile and Masturbation, while about eight in ten of the ever had sex were sexually active (had engaged in sexual act during the three months prior to the study), with a majority having indulged in risky sexual behaviors. This finding is consistent with the report in another study, which put it that they had sexual intercourse during the three months before the study [36]. Their finding confirms that the respondents indulged in risky sexual acts such as Oral sex and Sexting [37], as are in reports in the current research. Sexting for instance, can lead to bullying or shaming if the sent messages and or picture are made public.

It is pertinent to note that though 81.1% of the ever had sexual intercourse reports the use of

condoms, only less than half of them were consistent. This practice agrees with reports by other authors [36]. On the other hand, more than seven in every ten of the ever had sex reports having steady partnerships (Boy/girlfriend). Though there were variations in proportions, this finding agrees with reports elsewhere [36]. While these variations could be explained in the light of differences in methodologies such as study subjects, sampling procedures and data collection techniques, it is also suggested that this trend could be linked to the environment [38]. Our study setting is a fully residential setup, and there are reports that students living off-campus are two-fold more likely to have more than one sexual partner as against those living on campus [38]. About 39.7% of the ever had sex, had partners meet up on social media, while 20.9% patronize commercial sex workers. Though other researchers document similar results [2], the risks associated with meeting partners online and patronizing commercial sex workers cannot be overemphasized [39]. Even when our study setting has a religious background, our study did not enquire on existing religious or school-based counselling program targeted on alleviating the problems of students like those adumbrated above. This finding calls for genuine efforts at establishing and or strengthening school-based counselling program in order to curb risky sexual practices among this group.

In the present study, there is no statistically significant association between ever had sex and gender, and more female students engage in sexual acts than the males. Gender contributes significantly to the sexual practices among university undergraduates, as females were seen to be more promiscuous and more susceptible to risky sexual practices than their male counterparts [40]. However, this finding is inconsistent with those of studies in North-eastern Nigeria [41] and in Ibadan, Southwestern Nigeria [42], where significantly more males than females engage in sexual activity. Explanations for these findings could be due to differences in methodologies such as study subjects, sampling procedures and data collection techniques as well as observed gender variations in social control such as parental supervision now eased off by 'campus freedom' [36].

The index study finds statistically significant associations between use of social media for sexually explicit content and variables such as being sexually active; type of sexual acts

practised, and number of sexual partners. This finding is consistent with the findings of several studies which shows that use of social media for sexually explicit content influences users' sexual practices albeit negatively [2,5,41,43]. Observations made over the last decade suggests a notable increase in the proportion of undergraduate students involved in sexual activity during their stay in the university [40]. Implicated in this trend, are factors like the media, especially the social media. Moreover, observational-learning theory corroborates this finding. It thus indicates that exposure to sexual contents on the media could influence reciprocate behavior [11]. Such content is often discussed and exchanged within social networks [26]. Our study finds no associations between use of social media for sexually explicit content and use of condoms. While there is dearth of studies on this subject, a group of authors has a similar report [44]. Further studies are needed in this area.

5. LIMITATIONS AND STRENGTH OF THE STUDY

Reporting and recall biases could result from this study. Due to this, the data might not seem 100% reliable. The research tool cannot be trusted because of the need for privacy. Information about their first sexual debut and sexual acts has been reported. Given that the specifications of the statistical population are mentioned, the respondents may not want to disclose it. These biases, however, would have been minimized by the self-administration and anonymity entrenched in data collection, assuring the students that their answers are strictly confidential and for research purposes. The criteria for entering the research was only being "student"? Have there been any other criteria such as professional / normal use, belonging to sexual groups / non-belonging, etc., the quality of the study would be improved. We therefore suggest that this be considered in further studies. A major strength of this study is in the high response rate (100%) achieved.

6. CONCLUSION

This study examines social media use among undergraduate students in a private university in Nigeria and finds a high awareness of social media with source of information mostly via friends/ peers. Access to news, academics and viewing sex movies and pornography are the primary reasons for use of social media. Also, accessing sexually explicit content contributes to

risky sexual practices. There is no association between ever had sex and gender.

7. RECOMMENDATIONS AND SUGGESTIONS

There is the need for improved multi- sectoral measures (formal comprehensive sex education, peer education programs, school mini-media clubs and targeted behavior change intervention), Media and internet literacy education to control viewing of social media for sexually explicit content, while ensuring that young people's access to sexual health educational content is not compromised. Measures should be put in place to ensure that 'students who are heavy users, moderate the use of the sites to avoid addiction and create a balance between their offline and online lives while using the sites (16).' This ensures that they assess the quality and source of material that would encourage academic learning and enable them learn how to guide against the untoward effects of mal- exposures.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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